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# **Micro-foundations of God-Conscious Economic Agents in Islamic Economy**

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# Micro-foundations of God-Conscious Economic Agents in Islamic Economy

Salman Ahmed Shaikh<sup>1</sup>

## Abstract

*This paper discusses Islamic principles and how they can help in achieving efficiency along with equity in a market system. We start with the concept of 'human welfare' in Islam and show how it is distinct from the concept of welfare in western social sciences. The difference comes from the worldview. This difference is not trivial. It has important implications on human behavior and choices. Belief in perfect accountability and absolute justice will help in achieving ethical behavior even when it cannot be codified or made compulsory by law. After presenting the basic framework of welfare, we present how Islamic principles can systematically help to achieve equitable distribution of resources within a market system. We discuss the institution of Zakat and how it will incorporate diminishing marginal utility of wealth and also achieve the objective of circulation of wealth and utilization of idle resources. We also present labor market dynamics in an Islamic economy. We show how labor force participation, human capital development and technical progress will be achieved in an Islamic economy. Lastly, we discuss the effects of Zakat on bringing competition, efficiency, investment and employment.*

**Keywords** Islamic Economics, Welfare Economics, Zakat, Labor Market, Asset Market, Property Market, Consumer Theory, Producer Theory

**JEL Codes** L38 I31 O10

## 1. Introduction

Purpose behind human existence is one of the basic questions in philosophy. Centuries ago, pioneer philosophers used to study and discuss 'why we exist', but after renaissance in Europe and revolt against Church, social philosophers came to the front and raised issues of society and left study of 'why we exist'. Then, science developed, material life improved and economics became just the study of material progress and how we can achieve it.

However, the world today represents stark realities about material progress. On one hand, there are billions of people in abject poverty whereas; a small minority has majority ownership over resources.

Recklessness caused in the overall buildup of financial system in particular and socio-economic systems in general by individuals' self-centric economic choices is not considered possible in large body of rational expectations based modern economic theory and literature. We ignored the greed of individuals working inside financial

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institutions and the consumers who may fall prey to excessive advertising, consumerism and relative material comparison. All these tendencies are naturally present in any human. The problem is caused by the void which exists in a self-centric pursuit guided by material rationality alone. This problem becomes more complex since this material self-pursuit is bounded only by some particular legal restrictions.

Calling for stronger institutions is the right policy advice. But, achieving that would necessarily involve strengthening the value system and a binding force that encourages ethical behavior in society. That is where, role of a conditioning mechanism is very important. It could be law or belief in a shared philosophy that can give birth to a credible social contract. What will further be helping is having such a comprehensive doctrine that not only helps in coming up with a stable social contract but that can also define the purpose of human existence so that the social contract and its values/principles will not be operative only in particular situations, rather they will become part of society's core values at the micro level.

Islam as a comprehensive doctrine not only offers basis of such a social contract, but also defines the purpose of human existence. However, we confine the discussion in this paper to only analyze its economic principles which is a component of its social philosophy.

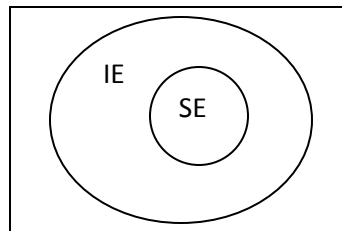
Islam does not necessarily define mutually exclusive ethical principles in contrast with the secular ethics. However, the set of ethical principles in Islam is mutually exhaustive because of its worldview and belief system.

Mathematically,

Let us define Islamic ethics set be represented by 'IE' and secular ethics set be represented by 'SE'. Then, we define following proposition:

$$IE \supset SE$$

It means that IE is a superset of SE. We can also show it through a Venn diagram.



**Figure 1: Comparison of Islamic and Secular Ethics**

Secular ethics is not absolute, rather it is relative. Unless it is codified, a secular society has no reason or guiding mechanism to nurture the good virtues among human beings. Hence, it is no surprise that famine, death from hunger and debt enslavement is the fact

of life for the three quarters of the people not because that overall, the societies have scarce resources, but because the distribution of resources is inequitable.

It is ironic that expenditure on reducing fat is more than expenditure on reducing hunger. Some sport stars and musicians earn equivalent sum as compared to some of the population of entire countries, but yet, what they provide in the market system is adjudged efficient allocation of resources as long as the other rich people can put up dollar votes for their provision.

The paper proceeds as follows. In section 2, we present the human welfare function in Islam. Section 3 discusses the income function of an individual household in an Islamic economy. Section 4 discusses the consumption function and how different functional forms can incorporate self-interest with socially desirable and ethical choices. Section 5 discusses the labor market in Islamic economic framework with equilibrium and comparative static analysis. In section 6, we present the profit function for equity financed firms in Islamic economy. Finally, section 7 presents the Zakat function and its effects on competition, efficiency, income distribution and wealth distribution.

## **2. Human Welfare Function in Islam**

Sadeq (1987) explains that Islam emphasizes the achievement of human welfare which is more comprehensive than economic welfare. Chapra (1999) also explains that while economic development is indispensable, it is not sufficient to realize overall human well being by default.

In recent years, even the western concept of development has recognized the wider dimensions of human development and the role of institutions (Mirakhor & Askari, 2010).

However, human welfare in Islam encompasses economic welfare, but comprises much more than that. The achievement of human welfare is sought in both aspects of human life, i.e. worldly life and eternal life hereafter.

Hence, the human welfare function can be represented by:

$$W_h = f(\alpha W_t, \alpha^m W_e)$$

Where

$W_h$  is total human welfare in both aspects of human life.

$W_t$  is human welfare in worldly life.

$W_e$  is human welfare in eternal life hereafter.

We can further explain this function to define  $W_t$  and  $W_e$ . Both these functions are defined as follows:

$$W_t = f(Z_t)$$

Where  $Z_t$  is a vector of variables which belong to the category of 'individual specific positive utility gaining choices'.

The constrained set which is a union of three sets is defined as follows:

$$C_S = \{ C_{worship} \} \cup \{ C_{self} \} \cup \{ C_{society} \} \cup \{ C_{people} \}$$

$$C_{worship} = \{\text{five times prayers, one month fasting, obligatory charity, hajj pilgrimage once}\}$$

$$C_{self} = \{\text{Acts which harm a person's own ethical and spiritual existence}\}$$

$$C_{society} = \{\text{Acts which harm society and its institutions}\}$$

$$C_{people} = \{\text{Acts which harm other people, their rights, freedom or property}\}$$

Hence, Islam does not deny individuals to fulfill their specific desires they can achieve in career, marriage, family life, business, eating variety of food, wearing variety of clothes, travelling, fine arts etc. It also does not deny temporary indebtedness to achieve these things which can help smooth the intertemporal consumption in this world.

Where Islam intervenes is in identifying for our own benefits the ills in potential acts which may harm us and/or the society and hence reduce the overall human and societal welfare. It is possible that we feel temporary satisfaction in some potential acts, but their long term impact on our spiritual and ethical existence and collective impact on society may reduce the overall human and societal welfare.

We can define the eternal life welfare function as follows:

$$W_e = f(Z_e)$$

Where  $Z_e$  is a vector of variables which belong to the category of 'following Allah's commands which will bring non-decreasing positive utility gain in life hereafter'. These commands do not segregate a human's life in two compartments. Rather, these commands help the humans to live this worldly life in the best possible manner of obedience to Allah and while being responsive and sensitive to the duties that they have to carry out in different roles of life.

Eternal life has no constraint set. Hence, unlike the usual constraints in Economics which limit the optimum value of a function, our constraint sets in worldly life are welfare maximizing in the long run for individuals. The worship set also reinforces the commitment not to violate the other three sets of constraints. The last three constraints which belong to the category of Huquq-ul-Ibaad are necessary conditions for welfare maximization of an individual. When they are not violated by individuals, the society also

benefits. Islam emphasizes that humans should embrace spiritual rationality as a compliment to material rationality so as to achieve total human welfare.

The achievement of lasting happiness and non-decreasing positive utility will only happen through maximizing both the functions, especially the eternal life function.

For ensuring no corner solution, we shall have both  $W_t > 0$  and  $W_e > 0$ .

Plus, Islam requires people to live modest but decent lives and fulfill their own needs and family needs. Islam does not permit monasticism and does not encourage celibacy. Hence,  $W_t$  not only shall be positive, but also achieve a threshold 'w' where the 'w' represents welfare from minimum level of standard of living that qualifies as balanced standard of living within bounds of Islamic injunctions without lavishness and violating the constraint sets.

The constraints of the life may sometimes require a tradeoff between the two functions. In such instances, the trial is to choose the right path ordained by Allah so as to achieve the maximum human welfare in the eternal life.

It is because of the parameter ' $\alpha$ '. Things that we enjoy in this world will be replaced by similar things in afterlife, but they will provide much more utility and they will not be finite nor will our satiation at any time will have binding constraints. The difference between the utility of same bundles traded off in this life for afterlife will be given by the positive multiplier in the exponent of parameter ' $\alpha$ ' that is part of eternal life function.

### 3. Income Function in Islamic Economy for Households

Income function of an individual 'i' can be represented by:

$$I_t = wL_t + E(\pi_t) + rA$$

Where,

'r' is rent on physical asset holdings 'A'. Market wage is 'w'. Labor supply is  $L_t$ .  $L_t$  is expected to be higher than in a capitalist economy as we show later. The reason is that the feasible income sources in an Islamic economy will not allow a perpetual income source which is a direct function of past accumulated wealth.

$E(\pi_t)$  is income from direct and indirect participation in entrepreneurial activities for individual 'i' in time period 't'.

For an individual,  $E(\pi_t)$  can be functionally represented as:

$$E(\pi_t) = \sum_{j=1}^k p_j \pi_j$$

Provided that  $0 < p_j \leq 1$ .

Where

$p_j$  is the profit sharing ratio in project 'j' agreed for time period 't' at time period 't-1'.

$\pi_j$  is the profit in project 'j'.

If a person is sole entrepreneur in some project 'j'. Then,  $p_j$  will be equal to unity.

Following will be the welfare constraints on income sources.

- a) Bribery (Al-Baqarah: 188).
- b) Usurping others' property (Al-Baqarah: 188).
- c) Fraud (Al-Imran: 161).
- d) Stealing and Robbery (Al-Maida: 38).
- e) Income from sources of vulgarity (Al-Noor: 19).
- f) Gambling (Al-Maida: 90).
- g) Wine and through analogical deduction all such businesses (Al-Maida: 90).
- h) Interest (Al-Baqarah: 275).

#### **4. Consumption Function in Islamic economy**

As per the human welfare function given above, the consumption function will be a part of overall human welfare function.

It is an empirical observation that people desire to have smooth consumption through their lifetimes. Lifecycle income hypothesis by Modigilani & Brumberg (1954) and permanent income hypothesis by Friedman (1957) try to explain that. Both negate the Keynes (1936) assertion that average propensity to consume (APC) falls as income rises. Microeconomic evidence is also consistent with lifecycle income hypothesis in various empirical studies in the literature.

The observed and logical preference for intertemporal consumption smoothening, balanced consumption bundles, variety, aspiration to have better and more consumption possibilities with rise in purchasing power etc are things that do not go against Islamic principles.

But, rather than complimenting humans in their animalistic instincts to keep having one-eyed focus on material well-being only, Islam inculcates piousness, kindness, cooperation and communal responsibility in humans. In some instances, Islam guides explicitly to avoid extravagance, lavishness and using certain products and services which harm a human's ethical existence and well being either individually and/or harm the society in the process.

Differences in risk preference and risk tolerance can also be incorporated with effective equity based financial intermediation or by seeking non-entrepreneurial income sources like providing labor or capital for fixed wage and rent respectively.

Functional representation of this discussion can make use of the following functional forms:

1. Leontief Perfect Compliments
2. Second Party Preferences
3. Family or Relational Utility
4. Lexicographic Utility

Using Leontief function, we may have a composite choice representing some socially desirable behavior like altruism etc and other consumption choices representing material goods bundles. Unless the person spends on socially desirable activities along with spending for own consumption, his/her utility will not move to higher indifference curve.

Mathematically,

$$U(x, y) = \min(\alpha X, \beta Y)$$

Here, 'x' may represent 'material consumption bundles' and 'y' may represent 'socially desirable choices'.

In second part preferences, utility function may be represented as:

$$U = U_i(x_i, y_i, U_j)$$

Here, person 'i' and 'j' are different. We can include scores of other people's utility as parameters. This functional form is richer in that it can help in endogenizing the utility functions of others. Even if scarcity in material resources is a problem to cope up with, one way is to selfishly choose consumption bundles to the extent of seeking exclusivity and satisfying self-esteem with Veblen goods. The other way is to cope up with scarcity in a shared and socially responsible way. Doing this requires incentives which our human welfare function incorporates.

In family or relational utility, we can express utility as:

$$U = U_i(x_i, y_i) + \sum_{j=1}^n r_j U_j$$

Here again, person 'i' and 'j' are different. We can include scores of other people's utility function as parameters. 'r<sub>j</sub>' measures closeness of relation. This closeness will depend upon relational, emotional, social and communal closeness between person 'i' and 'j'. Islamic principle of brotherhood and equality can further boost the value of 'r' beyond just family relations.



Family system of Islam brings social capital into existence. It ensures empathy and responsibility. It brings a very lasting and durable social safety net. Islamic injunctions about how to treat orphans ensure social security for individuals with special circumstances. Furthermore, the inheritance laws ensure that the wealth of the deceased is distributed widely among the members of the family of the deceased and this permanently and systematically ensures doing away with the concentration of wealth in every generation.

Finally, in lexicographic utility function, Zaman (2005) gave a proposal to take the basic utility function of human beings as a lexicographic ordering.

In his model, every bundle of goods  $x$ , is evaluated using two functions  $(U(x), V(x))$ . Given bundles of goods  $x$  and  $y$ , comparison between them is done first on the basis of  $U(x)$  and  $U(y)$ . If  $U(x) > U(y)$ , then  $x$  is preferred to  $y$ . If  $U(x) = U(y)$  then comparison is done by looking at the second component of the utility function, with  $x$  being preferred to  $y$  if  $V(x) > V(y)$ .

According to Zaman (2005), 'U' is interpreted as the basic needs function. 'U' will have certain properties to conform to this interpretation. It should have satiation points beyond which additional goods will not add utility. In addition, it should be sensitive only to certain types of goods (basic needs) and insensitive to other types (luxuries).

In his framework, a person is poor when he has a commodity bundle  $x$  such that  $U(x) < U^*$ . He states Pareto Principle in Lexicographic form as follows:

An allocation  $(x_1, x_2, \dots, x_n)$  of commodity bundles to individuals with utility functions  $(U_i, V_i)$  for  $i=1, 2, \dots, n$  is socially preferable to an alternative allocation  $(y_1, y_2, \dots, y_n)$  if either (a)  $U_i(x_i) > U_i(y_i)$  for all  $i$ , with strict inequality for at least one  $i$ , or (b)  $U_i(x_i) = U_i(y_i)$  for all  $i$ , and  $V_i(x_i) > V_i(y_i)$  for all  $i$  with strict inequality for at least one  $i$ .

#### **4.1. Welfare Constraints on Consumption**

Following will be the welfare constraints on consumption function.

##### **4.1.1. Limit on Choice Set**

Islam discourages lavish consumption, i.e. Israaf (extravagance even in lawful things) and Tabzeer (consumption in unlawful things like liquor, free sex etc). Islam encourages modesty and balance.

Islam encourages spending on society with directives for charity. Allah promises great rewards for charity. Belief in afterlife expands the decision making horizon for a consumer and the consumer is promised compound increase in utility for forgone consumption and charity payments in this world after fulfilling one's own needs.

#### 4.1.2. Limit on Budget Constraint

Islamic principles discourage indebtedness unless it is 'necessary'. That is why; provision of a loan is a non-compensatory act in Islam. However, for consumption smoothening motive, the consumer could borrow if needed. Apart from functional distribution of income from the production process, the purchasing power is complimented with Zakat payments, voluntary business transfer receipts and charity. Inheritance distribution and public sector transfer receipts from Waqf will also play the role of providing income support to the deserving people in society.

A person will be eligible for these income support programs provided:

$$C_i > I_i + W_i$$

### 5. Labor Market Equilibrium in Islamic Economy

#### 5.1. Labor Supply Function

Let the labor supply function be represented by:

$$NS = a_0 - NW + w - TR$$

Where,

$NS$  is labor supply.

$NW$  is net wealth after Zakat payment.

$w$  is market wage per unit of labor employed.

$TR$  is transfer receipts.

$a_0$  is the catch all term for all other variables.

We can see that  $\frac{\partial NS}{\partial NW}$  is negative. Hence, increase in wealth will decrease labor supply.

We will show later how  $NW$  will be a decreasing function because of Zakat and hence, labor supply is expected to be positively influenced by Zakat. Increase in labor force participation will also increase the total income accruing to laborers. It will also increase consumption and saving as both are function of income along with other factors.

#### 5.2. Labor Demand Function

Let the labor demand function be represented by:

$$ND = a_1 - w$$

Where,

$ND$  is labor demand.

$w$  is market wage per unit of labor employed.

$a_1$  is the catch all term for all other variables like productivity, capital stock etc.

### 5.3. Labor Market Equilibrium & Comparative Statics

In equilibrium,  $ND=NS$ .

$$a_0 - NW + w - TR = a_1 - w$$

$$2w = a_1 - a_0 + NW + TR$$

$$w = \frac{1}{2}\{a_1 - a_0 + NW + TR\}$$

Equation for equilibrium level of employment is obtained by:

$$N = a_1 - w$$

$$N = a_1 - \frac{1}{2}\{a_1 - a_0 + NW + TR\}$$

$$N = \frac{2a_1 - \{a_1 - a_0 + NW + TR\}}{2}$$

$$N = \frac{a_1 + a_0 - NW - TR}{2}$$

$$N = \frac{a_1 + a_0 - NW - TR}{2}$$

It can be seen that  $\frac{\partial N}{\partial NW}$  is negative. Hence, decrease in wealth will increase the equilibrium level of employment. While  $\frac{\partial N}{\partial a_1}$  is positive. Hence, increase in productivity and capital stock will increase the equilibrium employment as well. Also note that  $\frac{\partial w}{\partial a_1}$  is positive.

Hence, the Islamic economy will have the incentive in the form of higher wages for productivity enhancement from human capital development. Firms will also be encouraged in that system to invest in human capital because the barriers to entry in industries will be removed by disallowing fixed compensation to money capital. It will enhance the circulation of wealth and encourage widespread entrepreneurial culture. It will increase the numbers of firms and boost competition.

## **6. Producer Behavior in Islamic Economy**

### **6.1. Theory of Firm in Islamic Economics**

Amin et al (2003) explained that in the Islamic framework, it is assumed that economic agents are guided by Islamic values. Thus, an Islamic producer, being accountable to Allah, treats the resources at his command as a trust and the production of goods as a duty, and he will base his production decisions on the concept of 'maslaha'.

The author opines that a producer in an Islamic market could still be profit-driven; but, being governed by the Islamic principles, the producer's valuation of economic costs will be modified. Hence, the producer will internalize the externalities in its utility and cost functions.

Discussing the goal of the firm in an Islamic economy, Hasan (2002) argued that it is important to understand what is being maximized, how, and for what purpose. He cites examples and said that maximizing survival, employment, equity, or the pleasure of God would probably be welcome to most of the people. Hence, according to the author, maximizing behavior in Islamic economics is admissible.

The author opines that if the firms fulfill their Islamic duties towards the consumers, the employees, and the society in general in arriving at their total revenue curves, then profit maximization is not objectionable. He argues for internalizing social costs and benefits.

In mathematical modeling of a firm's behavior, Metwally (1997) describes an Islamic firm as one that would seek the maximization of utility which is a function of the amount of profits and the amount of spending on charity or good deeds. The author suggests using utility as a broad function which includes net profits as well as charity as parameters. However, the amount of profit would, after the payment of all imposed taxes (Zakat and other dues) be no less than a minimum level which is 'safe' to keep the firm in business.

In another mathematical formulation, Bendjilali and Taher (1990) argue that even in imperfect market structure like a monopoly, if the monopolist is concerned about the social welfare, then he will be willing to partially sacrifice his profits in order to attain efficiency and minimize social welfare loss.

Hence, it could be appreciated that several authors have emphasized on the ethical and spiritual rationality in the firm's behavior. In a value neutral framework, there is no cap or mechanism to solve problem of a human's greed. In fact, a value neutral framework provides a cover to follow, pursue, harness and practice greed. On the other hand, Islam addresses hearts and first of all, it purifies the heart, encourages compassion, responsibility and gives concepts of shared responsibility and afterlife accountability.

## **6.2. Debt Versus Equity Financing: Condition of Preference**

### **6.2.1. User Cost of Capital**

Mainstream economics define physical capital stock as things that are 'produced means of production'. In a market economy, physical capital stocks are either traded or rented. But when it comes to the price of capital, the user cost of capital is used given by Jorgenson (1963).

$$UC = P_k (r + d)$$

UC is user cost of capital,  
P<sub>k</sub> is purchase price of capital stock,  
r is real rate of interest,  
d is the depreciation rate.

In the intertemporal transfer of money in the loanable funds market, interest is legally regarded as the price of capital. However, it does not answer the philosophical and deep question of Thomas Aquinas as to what is the right price of money.

The contemporary view takes interest based financial intermediation as a given and exogenous. Given the existence of interest based financial intermediation, real interest could be used as price of use of physical capital stock with opportunity cost concept.

If Rs 1,000 earn 10% rate of interest in bank account, Rs 1,000 invested in machinery should yield at least 10% for justification of efficient allocation of resources. But, the legal, moral and philosophical base of 'interest based financial intermediation' still needs justification.

From the economic standpoint, there are following problems in interest based financial intermediation and its subsequent effects on goods markets and resource markets.

- i) It ignores the negative externality imposed through inflation on people. Interest paid is added in cost and through transfer pricing, it is paid by people eventually.
- ii) It discourages investment in socially optimal profitable projects, but which are not favored because of relative costing comparison from prevalent real interest rate.
- iii) It compels firms to engage in aggressive advertising and to promote consumerism to meet interest cost. Selling small number of units will not allow benefit from leveraging and meeting interest cost. Hence, they have no choice than to promote as much sales as possible.
- iv) If sales do not increase, it may lead to business cycle fluctuations with unplanned increase in inventories.

- v) With increased pressure to service debt, the environmental degradation and human resource exploitation may become common.
- vi) It results in skewed distribution of income and wealth with guaranteed return to capitalists and uncertain return to real sector entrepreneurs who are burdened to provide incessant increase to capitalists.
- vii) It supports only the wealthy entrepreneurs who are able to afford interest payments right from the start from their entrepreneurial pursuits and who already own capital that can be used as collateral. This will affect the kinds of entrepreneurial investments they make and hence allocation of resources.
- viii) With barriers to entry due to restricted availability of funds for investment in real sector, the real sector could result in increased market concentration in large scale businesses.
- ix) It may result in other negative externalities, e.g. increased income inequality, poverty and below full employment use of real scarce resources resulting by artificially making capital scarce. This is discussed by Keynes (1936) in his seminal book.
- x) Increased printing of fiat money by borrowing on interest will jeopardize the welfare of future generations. With no afterlife accountability, no policy maker or institution can incorporate infinite horizon and accountability to future generations. This will create the problem of moral hazard.

### **6.2.2. Condition of Preference for Leverage**

Modigliani & Miller (1963) argued that value of a levered firm is greater than the value of an unlevered firm. The difference in value comes from the tax benefit accruing to a levered firm. But, they ignored the bankruptcy costs and the case where even if a company is solvent, the economy may go through a recession.

Furthermore, if this tax benefit is provided to an unlevered firm by making dividends to be tax deductible; then, value of a levered firm may cease to have any extra value greater than an unlevered firm.

In a financial system which allows interest based debt finance, firm's condition of preference for debt over equity financing will be given by:

Over the planning horizon, prefer debt if:

$$k_d D < \{p_j \pi_j\} \quad \text{where } j = 1, 2, \dots, n.$$

Prefer equity financing if

$$k_d D > \{p_j \pi_j\} \quad \text{where } j = 1, 2, \dots, n.$$

### 6.3. Profit Function of a Non-Leveraged Firm in Islamic Economy

Next, we discuss the profit function of a typical equity financed firm. Here, it is important to mention that  $\pi_j$  will not include explicit and contractually stipulated cost of capital.

Let  $\pi_T$  represent total profits for firm 'i'. It can be functionally represented as:

$$\pi_T = pq - wL - C_f$$

Here,

$p$  is price of output determined in the market.

$q$  is output produced.

$w$  is wage per unit of labor employed.

$L$  is the number of labor employed.

$C_f$  is the fixed cost including rent paid for use of physical capital.

Let us say there are two partners, 'A' and 'B' in a particular project. Then,

$$\pi_A = p_A \pi_T$$

$$\pi_A = p_A (pq - wL - C_f)$$

$$\pi_B = p_B \pi_T$$

$$\pi_B = p_B (pq - wL - C_f)$$

Where  $p_A$  and  $p_B$  are respective profit sharing ratio agreed between A and B.

Also,  $\pi_T$  will be equal to:

$$\pi_T = p_A \pi_T + p_B \pi_T$$

Since there are only two partners,  $p_A + p_B = 1$

Alternatively, we can also express it by:

$$\pi_A = p_A \pi_T$$

$$\pi_A = \pi_T - p_B \pi_T$$

Hence, it can be seen that non-labor entrepreneurial income for a typical household will rest on total profits accruing to the firm and that in turn will depend on factors that are commonly faced by all other households and hence this will ensure equity and distributive justice.

Furthermore, with regards to externalities, we would like to mention another important point. A producer in an Islamic market could still be profit-driven; but, being governed by the Islamic principles, the producer's valuation of economic costs will be modified. Hence, the producer will internalize the externalities in its utility and cost functions to maximize the overall human function presented in section 2.

## 1. Zakat Function in an Islamic Economy

Zakat is a religious obligation to pay a part of wealth and production to the government. In its economic character, Zakat is a combination of a net worth levy and production levy.

Lifetime wealth Zakat function for an individual 'i' can be represented as:

$$Z_i = \sum_{t=1}^n 0.025 (NZW_t)$$

Here,

$Z_i$  is Zakat liability of an individual 'i'.

Time period 't' runs from  $t=1$  (current time period) to 'n' (terminal point of life).

$NZW_t$  represent net Zakat wealth. It is computed as  $(W_t - N_t)$ .

Where  $W_t$  is gross amount of wealth and  $N_t$  is value of Nisab amount.

Nisab is minimum threshold of wealth which is not subject to Zakat.

Zakat function of an economy can be represented as:

$$Z_T = \sum_{i=1}^n 0.025 (NZW_i)$$

For a particular individual 'i', net Zakat wealth at a point in time is given by:

$$W_t = I_t - 0.025(NZW_{t-1}) + W_{t-1} - C_t$$

Here,

$I_t$  is income of individual 'i' in time period 't'.

$NZW_{t-1}$  is the base of wealth that will be used for Zakat deduction.

$W_{t-1}$  is the wealth of individual 'i' in previous time period.

$C_t$  is the consumption in time period 't'.



Simplifying the above equation, we get:

$$\begin{aligned} W_t &= I_t - 0.025(W_{t-1} - N_{t-1}) + W_{t-1} - C_t \\ W_t &= I_t - 0.025W_{t-1} + W_{t-1} + 0.025N_{t-1} - C_t \\ W_t &= I_t + 0.975W_{t-1} + 0.025N_{t-1} - C_t \end{aligned}$$

Expanding it iteratively forward, we get

$$\begin{aligned} W_{t+1} &= I_{t+1} + W_t - 0.025(W_t - N_t) - C_{t+1} \\ W_{t+1} &= I_{t+1} + 0.975W_t + 0.025N_t - C_{t+1} \\ W_{t+1} &= I_{t+1} + 0.975(I_t + 0.975W_{t-1} + 0.025N_{t-1} - C_t) + 0.025N_t - C_{t+1} \\ W_{t+1} &= I_{t+1} + 0.975I_t + 0.950625W_{t-1} + 0.024375N_{t-1} + 0.025N_t - 0.975C_t - C_{t+1} \end{aligned}$$

It can be seen that the wealth function will decumulate base year wealth and overall wealth can only increase with increase in income, labor plus non-labor.

### 1.1. Wealth Concentration – A Simulation Exercise

Table 2 provides a simulation example. Suppose in an economy, there are two individuals, A and B. Let us assume that both earn fixed income from labor. Both have same level of wealth, i.e. RM 1,000,000 initially. In an interest based system, there is 10% rate of interest offered on deposit, net of taxes. In an Islamic economy, there is no such possibility of earning fixed return on accumulated wealth. After 20 years, the last row shows the wealth disparity between two individuals. Wealth multiple initially is 1:1 whereas, wealth multiple after 20 years is 11.16 and it is going to increase exponentially. Another result of interest is the fact that Islamic system is able to incorporate the diminishing marginal utility of wealth; whereas, the capitalist system is ensuring legalistically more wealth share to bigger and bigger capitalists by default.

**Table 2: Wealth Concentration – A Simulation Example**

A				B		
Period	Wealth	Interest		Period	Wealth	Zakat
0	1,000,000			0	1,000,000	
1	1,100,000	100,000		1	975,000	25,000
2	1,210,000	110,000		2	950,625	24,375
3	1,331,000	121,000		3	926,859	23,766
4	1,464,100	133,100		4	903,688	23,171
5	1,610,510	146,410		5	881,096	22,592
6	1,771,561	161,051		6	859,068	22,027
7	1,948,717	177,156		7	837,592	21,477
8	2,143,589	194,872		8	816,652	20,940
9	2,357,948	214,359		9	796,236	20,416
10	2,593,742	235,795		10	776,330	19,906
11	2,853,117	259,374		11	756,921	19,408
12	3,138,428	285,312		12	737,998	18,923
13	3,452,271	313,843		13	719,548	18,450
14	3,797,498	345,227		14	701,560	17,989
15	4,177,248	379,750		15	684,021	17,539
16	4,594,973	417,725		16	666,920	17,101
17	5,054,470	459,497		17	650,247	16,673
18	5,559,917	505,447		18	633,991	16,256
19	6,115,909	555,992		19	618,141	15,850
20	6,727,500	611,591		20	602,688	15,454

## Conclusion

In this paper, we discussed the distinct nature of the concept of ‘human welfare’ in Islam. We discussed how Islamic worldview and beliefs solve the problem of greed and encourage ethical behavior in absolute sense. We presented how Islamic principles can systematically help to achieve equitable distribution of resources within a market system. We discussed the institution of Zakat and how it will incorporate diminishing marginal utility of wealth and also achieve the objective of circulation of wealth and utilization of idle resources. We also presented labor market dynamics and equilibrium in an Islamic economy. We showed how labor force participation, human capital development and technical progress will be achieved in an Islamic economy. Our analysis suggests that the Islamic principles can foster competition, efficiency, investment and employment without compromising on equity.

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